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EXAMINER

DEPPE, BETSY LEE

ART UNIT

PAPER NUMBER

2637

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/743,593

Applicant(s)

O'NEILL, RORIE

Examiner

Betsy L. Deppe

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed July 18, 2005 have been fully considered but they are not persuasive.
2. In response to applicant's argument on pages 5-6 that Kotzin does not disclose the coding of an information symbol based on the dual features of the forward error correcting code and the power variation, the Examiner respectfully traverses. Since Kotzin encodes the signal with a forward error correction code and determines the peak-to-average ratio of the coded signal to select another coding technique, the subsequent coding scheme is based on the prior coding scheme (i.e. "a forward error correction scheme") and the peak-to-average (i.e. "power variation") thereby reading on the claimed invention.

Drawings

3. Since page 4 refers to Figures 3-6 as "conventional," Figures 3-6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the

changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because it includes form and legal phraseology often used in patent claims (see "comprise"). Correction is required. See MPEP § 608.01(b).

Claim Objections

6. Claims are objected to because of the following informalities:

in claim 1, line 9, "the combined signal" should be "a combined signal";

in claim 1, line 11 "a combined signal" should be "the combined signal"; and

in claim 13, line 3, the Examiner suggests inserting "the steps of:" after "comprising."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. In claims 1 and 13, it is unclear what is referred to by "both" in claim 1, line 6 and claim 13, line 8. It appears that only the encoding is "in response to . . . and including" but "both" suggests that another step is "in response to and including." Dependent claims 2-12 are rejected for the same reason.

10. Claim 8 recites the limitation "the determination" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1-4, 6, 7, 9 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kotzin et al. (US Patent No. 5,894,498 cited in the Office Action mailed June 16, 2005)
13. With regard to claims 1-3 and 13, Kotzin et al. discloses the claimed invention including a means of generating information symbols (which is inherent to provide information on 102-105), at least one encoder (401 in Figure 4); and a subchannel transmitter (210 in Figure 2). (See column 3, lines 7-25; column 4, line 63 - column 6, line 6) Since coder 401 produces "corresponding base band signals" for the input information signals (see column 6, lines 1-4), it is implicit that the forward error correction scheme is applied to each individual subchannel. Furthermore, since forward error correction adds bits to the information symbol, it is implicit/inherent that the channel symbol resulting from the encoding is selected from a higher order symbol constellation comprising redundant symbol values.
14. With regard to claim 4, Kotzin et al. teaches using a convolutional coding technique (see column 6, lines 4-6). Since convolutional coding involves trellises, Kotzin et al. reads on the limitation of "trellis coding scheme" recited in claim 4.
15. With regard to claims 6 and 7, Kotzin et al. discloses generating compensation data to reduce amplitude variations of the combined signal and a memory unit. (See

column 1, lines 64-67 and column 6, lines 7-31) The preprogramming of the base station suggests a memory unit for storing the pre-programmed information/data.

16. With regard to claim 9, Kotzin et al. teaches a receiver that estimates compensation data and evaluates transmission quality. (See column 6, line 56- column 7, line 3)

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotzin et al. as applied to claim 1 above, and further in view of Marshall (US Patent No. 5,502,744 cited in the Office Action mailed June 16, 2005).

19. With regard to claim 5, Kotzin et al. discloses the claimed invention except for encoding BPSK information into 8PSK symbols. Marshall teaches using various encoding schemes, such as QAM, QPSK, and 8-PSK, based on considerations such as desired channel gain or reliability. (See column 1, line 28 - column 2, line 7) Therefore, it would have been an obvious design choice to one of ordinary skill in the art at the time the invention was made to encode BPSK information into 8PSK symbols based on system considerations such as desired channel gain versus desired reliability.

20. With regard to claim 10, Kotzin et al. discloses the claimed invention except for uses a different transmission format between subchannels. Marshall discloses using different modulation transmission formats simultaneously. (See Figure 1 and column 2, lines 18-20) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use different modulation transmission formats as disclosed by Marshall in the circuit of Kotzin et al. in order to increase the data transmission rate of the information that requires less reliability.

21. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kotzin et al. as applied to claim 6 above, and further in view of Krueger et al. (US Patent No. 5,982,818 cited in the Office Action mailed June 16, 2005). Kotzin et al. discloses the claimed invention except for determining compensation data in response to intersymbol interference.

Since Krueger et al. discloses implementing trellis codes for intersymbol interference channels (see abstract and column 1, lines 6-10), it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the coding technique in Kotzin et al. using intersymbol interference information in order to increase the reliability of the data transmission (see Krueger et al., column 1, lines 7-10) while still meeting the peak-to-average ratio requirements.

22. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotzin et al. as applied to claim 1 above, and further in view of Cimini, Jr. et al. (US

Patent No. 6,556,557 B1 cited in the Office Action mailed June 16, 2005). Kotzin et al. discloses the claimed invention except for using the invention in an OFDM or CDMA communication scheme.

Cimini, Jr. et al. discloses a system that reduces the peak to average power ratio of an OFDM or CDMA signal. (See abstract and column 2, line 61 - column 3, line 4) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transmitter disclosed by Kotzin et al. in either an OFDM or CDMA system as disclosed by Cimini, Jr. et al. in order to have greater control over reducing the peak to average power ratio in an OFDM or CDMA system.

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (571) 272-3054. The examiner can normally be reached on Monday, Tuesday and Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272 - 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Betsy L. Deppe
Primary Examiner
Art Unit 2637